

Title (en)  
FLUORINATED GRAPHITES, A PROCESS FOR THEIR PRODUCTION AND AN ELECTRIC CELL USING THE SAME AS ACTIVE MATERIAL OF THE POSITIVE ELECTRODE

Publication  
**EP 0119595 A3 19860625 (EN)**

Application  
**EP 84102806 A 19840314**

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• JP 10170183 A 19830609  
• JP 11099983 A 19830622  
• JP 13035583 A 19830719

Abstract (en)  
[origin: EP0119595A2] A fluorinated graphite having the formula  $(C_xF)_n$  wherein x is a numerical value of about 2.0 to about 5.5 and n refers to an indefinite number of the recurring  $(C_xF)$  unit and having a crystalline structure exhibiting a peak at about 13.7 DEG to about 15.0 DEG in terms of an angle of 2 theta corresponding to the diffraction at the (001) plane in the X-ray diffraction pattern, a peak in the vicinity of 685.3 eV due to the F1S and two peaks in the vicinity of 287.5 eV and 284.3 eV due to the C1S in the spectrum of electron spectroscopy of chemical analysis, two peaks in the vicinity of 1100  $cm^{-1}$  and 1240  $cm^{-1}$  in the IR spectrum, and an electric conductivity of at least about  $10^{-8} \Omega^{-1}cm^{-1}$ , and being thermally stable in air up to 200 DEG C from the viewpoint concerning a pattern of X-ray diffraction; a process for producing the fluorinated graphite thereof which comprises subjecting a carbon material to electrolysis in hydrogen fluoride at a voltage of about 6.5 V to about 15 V at a temperature of about -40 DEG C to about 100 DEG C in the presence of an electrically conductive agent; and an electric cell comprising a negative electrode using a light metal as an active material, an electrolyte and a positive electrode using, as an active material, the fluorinated graphite. The fluorinated graphite has a wide variety of uses, for example, besides as an active material for the positive electrode of an electric cell as above, lubricants, stain-resistant and water and/or oil repellent materials, etc. The electric cell as above is advantageously used in devices requiring a high voltage such as a watch, a clock, a small radio, a small computer, etc.

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Citation (search report)  
• [A] US 3514337 A 19700526 - BRAEUER KLAUS, et al  
• [A] CHEMICAL ABSTRACTS, vol. 96, no. 12, 22nd March 1982, page 572, no. 93908x, Columbus, Ohio, US; F. BECK et al.: "Reversible electrochemical formation of graphite fluorides from aqueous hydrofluoric acid", & ANGEW. CHEM. 1982, 94(1), 83-4  
• [A] SOLID STATE IONICS, vol. 1, nos. 1,2, April 1980, pages 87-110, North-Holland Publishing Co., Amsterdam, NL; N. WATANABE: "Two types of graphite fluorides  $(CF)_n$  and  $(C_2F)_n$ , and discharge characteristics and mechanisms of electrodes of  $(CF)_n$  and  $(C_2F)_n$  in lithium batteries"

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